

# GROUP TESTIMONY: DEFENDING A REDUCTIONIST VIEW

Domingos FARIA

**ABSTRACT:** Our aim in this paper is to defend the reductionist (or deflationist) view on group testimony from the attacks of divergence arguments. We will begin by presenting how divergence arguments can challenge the reductionist view. However, we will argue that these arguments are not decisive to rule out the reductionist view; for, these arguments have false premises, assuming dubious epistemic principles that testimony cannot generate knowledge and understanding. The final part of this paper will be devoted to presenting the advantages of the reductionist approach to explaining the phenomenon of group testimony.

**KEYWORDS:** collective epistemology, group epistemology, group testimony, divergence arguments

## 1. Group Testimony: Who Is the Source of Knowledge?

We gain a lot of knowledge through the testimony of others; many of our beliefs are learned from the spoken or written word of others. The traditional problem in this field has to do with the epistemic status of these beliefs and whether or not a receiver needs positive reasons to accept the testimony of a sender. Following the tradition of David Hume, it is argued that receivers must possess positive reasons in order to be justified in accepting the testimony of senders. In contrast, following the tradition of Thomas Reid, it is stated that though the presence of positive reasons is not necessary to acquire testimonial justification or knowledge, the absence of negative reasons is necessary. Generally, the focus of analysis in these cases is the testimony of individuals.

However, we can also acquire knowledge through the testimony of groups. For example, given the collaborative work done in science, we gain scientific knowledge through the testimony of research groups. Similarly it seems that we can acquire knowledge through the testimony of collective entities such as organizations, companies, clubs, churches, among others. In this paper, we want to deal with new problems on testimony related to collective epistemology: When we acquire knowledge from the testimony of a group, who is the source of this knowledge? Is this source reducible to an individual (or set of individuals) in the group? Or, instead, is this source not reducible to any element of the group, and

thus the group itself is that source of testimonial knowledge? In other words, can groups testify knowledge that their individual members lack?

There are two main views that answer these problems: reductionism (or deflationism) and non-reductionism (or inflationism).<sup>1</sup> On the one hand, the reductionist view holds that a group's testimony that  $p$  is reducible to the testimony of at least one individual in that group. In this sense, a group testifying that  $p$  means that at least one individual member of the group would testify that  $p$  if the relevant opportunity arises.<sup>2</sup> Here we want to focus on a minimal version of reductionism, which provides only a necessary condition, but not a sufficient condition, for group testimony. More precisely, this minimal view can be formalized as follows:

Reductionism =<sub>df</sub> Necessarily, a group  $g$  testifies that  $p$  only if at least one individual  $i$  is both a member of  $g$  and testifies that  $p$ .

$$\Box(Tpg \rightarrow \exists i(i \in g \wedge Tpi))$$

This view needs some qualifications. Namely, the testimony of an individual member  $i$  of  $g$  must meet certain conditions, such as the following: (1)  $i$  is authorized by  $g$  to provide the testimony; (2)  $i$  provides testimony as a member of  $g$ . Thus, if  $i$  is not licensed to testify on behalf of a group  $g$ , or if  $i$  testifies as private individual or member of a distinct group  $g^*$ , then her testimony is not considered group  $g$  testimony.<sup>3</sup> Lackey<sup>4</sup> argues for a slightly different version of reductionism, according to which group testimony is reducible to the group's spokesperson who does not have to be a member of the group. However, here we will assume that if there is a spokesperson who speaks on behalf of a given group, then that individual is somehow collaborating with the group and, therefore, belongs in a broad sense to that group.<sup>5</sup> In short, according to reductionism, the

---

<sup>1</sup> In this context of collective epistemology, the use of the terms "reductionism" and "non-reductionism" cannot be confused with the reductionism of the Hume tradition and the non-reductionism of the Reid tradition in the context of justifying individual testimony.

<sup>2</sup> See Jennifer Lackey, "A Deflationary Account of Group Testimony," in *Essays in Collective Epistemology*, ed. Jennifer Lackey (Oxford University Press, 2014), 64–94, <https://doi.org/10.1093/acprof:oso/9780199665792.003.0004> and Jesper Kallestrup, "Groups, Trust, and Testimony," in *Trust in Epistemology* (Routledge, 2019), 136–58, <https://doi.org/10.4324/9781351264884-6>.

<sup>3</sup> These qualifications are evidenced by Kallestrup (*ibid.*).

<sup>4</sup> "A Deflationary Account of Group Testimony."

<sup>5</sup> We are assuming that groups may have different membership levels or status. In a strict sense a member of a group is one who is properly designated as such (for example by leaders or operational members, in an informal or formal context, and according to the rules of that group). In a broader sense, a member of a group is one who is contributing to the functioning of that

epistemic credentials of group testimony are reducible to the epistemic credentials of at least one authorized individual testimony who belongs in a narrow or broad sense to that group.

On the other hand, the non-reductionist view is the negation of reductionism. In this view the group itself is the source of the testimonial knowledge. For, it holds the possibility that the testimony of a group is irreducible to the testimony of all or some of its individual members. So, a group testifying that  $p$  cannot be understood in the sense that at least one individual member of the group would testify that  $p$  if the relevant opportunity arises. More specifically, we can formalize non-reductionism as follows:

Non-reductionism =<sub>df</sub> Possibly, a group  $g$  testifies that  $p$  even when no individual member of  $g$  testifies that  $p$ .

$$\Diamond(Tpg \wedge \neg \exists i (i \in g \wedge Tpi))$$

Which of these perspectives is the most plausible? In this paper, we want to defend the reductionist view against divergence arguments. We will begin in section 2 by presenting how divergence arguments can challenge the reductionist view. However, in section 3, we will argue that these arguments are not decisive to rule out the reductionist view. Section 4 will be devoted to presenting advantages of the reductionist approach to explaining the phenomenon of group testimony.

## 2. Divergence Arguments Against Reductionism

So-called *divergence arguments* are the main motivation for non-reductionism. These arguments aim to show that reductionism is false because it is possible for a group to testify that  $p$  while none of its individual members testifies  $p$  (or is able to testify  $p$ ). Thus, concerning testimonial knowledge, there is an epistemic divergence between groups and their individual members. In support of this divergence there are two strong counterexamples against the reductionist view. The first counterexample presents a case in which a group clearly testifies

---

group; in other words, a member is someone who plays some kind of functional role for the group. Following the proposal of David Strohmaier, "Group Membership and Parthood," *Journal of Social Ontology* 4, 2 (2018): 132, <https://doi.org/10.1515/jso-2018-0016>, "a part of a group is a member of this group if, and only if, it is an agent and it is appropriately designated to contribute to the group's functioning. (...) The members are not designated as members but as contributing to the group's functioning." A spokesperson seems to satisfy these conditions to be a member of a group. Namely, the spokesperson is a member of a group because he is an agent and, moreover, has been appropriately designated as contributing to its functioning (by playing the functional role of spokesperson).

knowledge which its individual members lack. This case is inspired by J. Adam Carter:<sup>6</sup>

**REPORT CASE:** A small committee of art experts has been called in to determine the veracity of a very rare pottery piece. This committee uses the best methods of science to distinguish genuine and fake antiquities. By following strictly professional and scientific norms they come to a conclusion: the dating of this pottery piece is approximately 14,000 BC – we call this proposition  $q$  to abbreviate. Suppose this committee writes a public report with that conclusion  $q$ . However, each member of this committee is a young earth creationist, and therefore privately each believes that the earth and the very rare pottery piece are less than 6,000 years old.

This REPORT CASE is a case where not a single member of the group in question believes that  $q$  and so, each of its individual members fails to know that  $q$ , yet recipients or readers of the public report can nonetheless acquire knowledge that  $q$  on the basis of the group's testimony that  $q$ . But if each one fails to believe and to know the proposition  $q$ , then no individual member can be the source of testimonial knowledge that  $q$ . This is because if a sender doesn't know that  $q$ , then there is no way that a recipient can come to know that  $q$  through believing the sender's testimony.<sup>7</sup> Instead, the group itself is the source of testimonial knowledge, given that the group itself knows that  $q$ .<sup>8</sup> If this case is plausible, reductionism is false.

---

<sup>6</sup> "Group Knowledge and Epistemic Defeat," *Ergo, an Open Access Journal of Philosophy* 2, 20190926 (2015), <https://doi.org/10.3998/ergo.12405314.0002.028>.

<sup>7</sup> This premise is defended by Angus Ross, "Why Do We Believe What We Are Told?" *Ratio*, 1 (1986): 69–88, Michael Dummett, "Testimony and Memory," in *Knowing from Words* (Springer Netherlands, 1994), 251–72, [https://doi.org/10.1007/978-94-017-2018-2\\_12](https://doi.org/10.1007/978-94-017-2018-2_12), Robert Audi, "The Place of Testimony in the Fabric of Knowledge and Justification," *American Philosophical Quarterly* 34, 4 (1997): 405–22, <https://doi.org/10.2307/20009910>, Tyler Burge, "Content Preservation," *Philosophical Issues* 6 (1995): 271, <https://doi.org/10.2307/1523046>; "Interlocution, Perception, and Memory," *Philosophical Studies* 86, 1 (1997): 21–47, <https://doi.org/10.1023/a:1004261628340>, Steven L. Reynolds, "Testimony, Knowledge, and Epistemic Goals," *Philosophical Studies* 110, 2 (2002): 139–61, <https://doi.org/10.1023/a:1020254327114>. The main idea of this premise is that the testimony only transmits, but does not generate new knowledge. In other words, testimony only disseminates knowledge, does not discover or generate it.

<sup>8</sup> Non-reductionist or inflationary accounts of group knowledge support the possibility that knowledge attributions apply to groups while they do not apply to their members. See, for example, Margaret Gilbert, "Collective Epistemology," *Episteme* 1, 2 (2004): 95–107, <https://doi.org/10.3366/epi.2004.1.2.95>, Raimo Tuomela, "Group Knowledge Analyzed," *Episteme* 1, 2 (2004): 109–27, <https://doi.org/10.3366/epi.2004.1.2.109>, Kay Mathiesen, "Can Groups Be Epistemic Agents?" in *Collective Epistemology*, eds. Hans Bernhard Schmid, Daniel Sirtes, and Marcel Weber (Ontos, 2011), 23–44, Alexander Bird, "When Is There a Group That Knows?" in

Another important counterexample is based on *distributed cognition* in which there is a division of cognitive labor within a group. In such a case the task of producing knowledge is divided into subtasks. Each subtask is assigned, depending on the area of expertise, to different individual members. However, no member of the group is able to grasp each other's tasks. Thus it seems that the production of knowledge, and its consequent testimony, is not reducible to individual members, but is something that depends on the group itself. In order to clarify this point, we can imagine a case inspired by Alexander Bird:<sup>9</sup>

**TALK CASE:** Dr. X is a physicist and Dr. Y is a mathematician. Both are collaborating on a project to demonstrate the truth of the conjecture  $q$ , but each one works alone and without communicating. Suppose they agreed in advance with an assistant, who only knows how to apply *modus ponens*, to give a talk showing that  $q$  just in case the assistant receives independently from Dr. X the proof that  $p$  is true and from Dr. Y the proof that  $p \rightarrow q$ . Based on empirical experiments Dr. X shows that  $p$ ; while based on pure mathematics Dr. Y shows that  $p \rightarrow q$ . The assistant applies *modus ponens* and gives the talk.

In this case the research team seems to know and to testify that  $q$ , and such knowledge is acquired and understood by an audience of scientists to whom the assistant is giving the talk. However, none of the research team members individually knows and is able to testify that  $q$ . Neither the assistant himself, who is giving the talk, is the source of the testimonial knowledge that  $q$ ; given that he does not have the ability to understand the demonstration that  $p$  and the proof that  $p \rightarrow q$ , as well as he is unable to grasp the meaning of  $q$ . He is simply reading the result, not understanding the body of information or domain he is talking about. In this regard, Kallestrup<sup>10</sup> holds that:

The testifier is the group itself. The point here is not so much that the assistant lacks knowledge of  $q$ , but that he even lacks the required expertise to grasp such a complex proposition. Because nobody can properly assert a proposition they do not understand, the assistant cannot be regarded as testifying that  $q$ . Nor can either Drs. X and Y be said to testify  $q$ . Nothing about the way the case is described suggests their linguistic behavior amounts to an assertion that  $q$ . Dr. X asserts that  $p$  but not  $p \rightarrow q$ , whereas Dr. Y asserts  $p \rightarrow q$  but not  $p$ , and so neither

---

*Essays in Collective Epistemology*, ed. Jennifer Lackey (Oxford University Press, 2014), 42–63, <https://doi.org/10.1093/acprof:oso/9780199665792.003.0003>, and Deborah Tollefsen, *Groups as Agents* (Polity, 2015).

<sup>9</sup> "Social Knowing: The Social Sense of 'Scientific Knowledge'," *Philosophical Perspectives* 24, 1 (2010): 23–56, <https://doi.org/10.1111/j.1520-8583.2010.00184.x>; "When Is There a Group That Knows?" 57–58.

<sup>10</sup> "Groups, Trust, and Testimony," 140.

asserts  $q$  on the basis of *modus ponens*.

Are these counterexamples decisive in defending non-reductionism and rejecting reductionism? In the next section we will argue that these are not good counterexamples.

### 3. Defeating Divergence Arguments

In the previous section, we saw two main ways to attack the reductionist view. Now we want to argue that none of them is plausible.

#### 3.1 Problems With the First Argument

Analyzing the first case, REPORT CASE, we can highlight that the central argument can be reconstructed as follows: No single member of the group  $g$  knows that  $q$ . If no single member of  $g$  knows that  $q$ , then a recipient  $R$  cannot come to know that  $q$  on the basis of the testimony that  $q$  provided by a single member of  $g$ . Thus,  $R$  cannot come to know that  $q$  on the basis of the testimony that  $q$  provided by a single member of  $g$ . However, REPORT CASE shows that  $R$  can come to know that  $q$  on the basis of the testimony that  $q$  provided by  $g$  itself, given that  $g$  itself can know that  $q$ . Therefore, if this is so, then the source of testimonial knowledge is  $g$  itself, not being reducible to its individual members. Is this a good argument? Note that the argument works only if the following premise is true:

(K) If a sender  $S$  doesn't know that  $p$ , then a recipient  $R$  cannot come to know that  $p$  on the basis of the testimony that  $p$  provided by  $S$ .

Premise (K) underlies the idea that the testimony is merely transmissive and cannot itself generate new knowledge. In other words, the testimony can only transmit epistemic properties from one subject  $S_1$  to another  $S_2$ ; so, if  $S_1$  has no knowledge, then  $S_2$  cannot acquire knowledge through  $S_1$ 's testimony. Simply put, it would be like relying on a friend to pay our bill, but that friend is broke as we are; if he can't pay the bill, we can't either. An analogy between testimony and memory is often presented as a reason for this premise (K). For instance, Dummett<sup>11</sup> writes that:

If remembering something is to count as retaining a knowledge of it, it must have been known when originally witnessed or experienced; if it was derived from a misperception or misapprehension, the memory cannot of course rank as knowledge. The same naturally applies to taking something to be so, having been told it: the original purveyor of the information – the first link in the chain of transmission – must himself have known it, and therefore have been in a position

---

<sup>11</sup> "Testimony and Memory," 264.

to know it, or it cannot be knowledge for any of those who derived it ultimately from him.

The main point has to do with the fact that memory only preserves knowledge from a moment to another, so testimony also only transmits knowledge from a sender to a receiver. In both cases no knowledge is generated, only preserved or transmitted. But is that plausible? A direct objection to (K) is presented by Peter J. Graham<sup>12</sup> through the following compelling counterexample:

**TEACHER CASE:** A devout creationist teaches at a public school where she must teach a section on evolutionary theory. She does not believe a word of it, but is a dedicated and responsible teacher. She develops a near expert understanding based on deep reading of books and articles on evolutionary science. She even develops a deep understanding of fossils that parallels highly skilled scientifically trained expertise. On a fieldtrip she discovers a fossil that proves that ancient humans [from which we evolved] once lived in this area (itself a surprising discovery no one knew before) [– for brevity let’s call this proposition *p*]. Though she does not believe it, when she tells this to her students, they believe her. Because of her commitment to teaching, her exposure to evolutionary science, and her mastery of fossils, she would not say what she did unless it were true. Her assertion is a reliable indicator. Relying on their teacher, the schoolchildren would not easily be mistaken.

In this case the sender, the creationist teacher, doesn’t know that *p*, because she doesn’t believe *p* (only accepts *p* for practical teaching and research purposes).<sup>13</sup> However, the receivers, the students, know that *p*, given that they have a safe and justified true belief, un-Gettierized, that *p*. This case shows that a sender *S* doesn’t know that *p*, but a recipient *R* can come to know that *p* on the basis of the testimony that *p* provided by *S*. Moreover, it is shown that testimony not only transmits knowledge but can also *generate* it. This is because the first link in the chain of transmission, the teacher, doesn’t know that *p*; yet her testimony was able to generate knowledge in the students – since these students know

---

<sup>12</sup> “Testimonial Knowledge: A Unified Account,” *Philosophical Issues* 26, 1 (2016): 176, <https://doi.org/10.1111/phs.12082>.

<sup>13</sup> Here we are claiming that *belief* and *acceptance* are different states. On the one hand, belief is an involuntary dispositional state, aims at truth, follows evidence, is ideally coherent, and comes in degrees. On the other hand, acceptance is voluntary, aims at pragmatic success, follows interests and desires, and allows for contradiction. See Jonathan Cohen, “Belief and Acceptance,” *Mind* XCVIII, 391 (1989): 367–89, <https://doi.org/10.1093/mind/xcviii.391.367>, Andrei Buckareff, “Acceptance and Deciding to Believe,” *Journal of Philosophical Research* 29 (2004): 173–90, [https://doi.org/10.5840/jpr\\_2004\\_17](https://doi.org/10.5840/jpr_2004_17), and Hamid Vahid, “Alston on Belief and Acceptance in Religious Faith,” *The Heythrop Journal* 50, 1 (January 2009): 23–30, <https://doi.org/10.1111/j.1468-2265.2009.00430.x>.

through the teacher's testimony something new that no one has ever known before.<sup>14</sup> Thus, premise (K) is false.

Since (K) is false, REPORT CASE is not plausible to deny the view that group testimony is a reducible source of knowledge. For, just as students, in TEACHER CASE, can come to know a theory from the testimony of a teacher who does not know that theory (because she does not believe it), it is also possible that recipients of the public report, in REPORT CASE, can come to know that  $q$  on the basis of the testimony that  $q$  provided by a single member of the committee who does not know that  $q$ . In other words, since a sender  $S$  need not know that  $q$  in order for a recipient to acquire knowledge that  $q$  through  $S$ 's testimony, there is no reason to claim that lack of knowledge on the part of singular members of the committee, in REPORT CASE, precludes recipients from knowing that  $q$  through their testimony. On this basis we can state that REPORT CASE does not show that reductionism is false.<sup>15</sup>

### 3.2 Problems With the Second Argument

The second counterexample, TALK CASE, has advantages over REPORT CASE, since it is not based on the controversial premise (K). With regard to TALK CASE, Kallestrup<sup>16</sup> argues that group testimony is not reducible to the testimony of any of its members, not even to the assistant member who is giving the talk. This is because if someone  $x$  testifies that  $q$ , then  $x$  properly asserts that  $q$ . And if  $x$

---

<sup>14</sup> This case has advantages over similar ones. One of the most popular cases is the creationist teacher presented by Jennifer Lackey, "Testimonial Knowledge and Transmission," *The Philosophical Quarterly* 49, 197 (1999): 471–90, <https://doi.org/10.1111/1467-9213.00154>; *Learning from Words: Testimony as a Source of Knowledge* (Oxford University Press, 2008). This teacher professionally teaches the theory of evolution, but does not believe in this theory and thus does not know it. But her students are in a position to gain knowledge about the theory of evolution. The problem is that Lackey case does not undermine (K), given that the first links in the chain of transmission, that goes back to Darwin, know that the theory of evolution is the case. This last teacher just skips a link in the chain of testimonial knowledge and so knowledge is not generated by the chain. However, in the case modified by Graham ("Testimonial Knowledge") we do not have this problem. For a discussion of such cases see Peter J. Graham, "Can Testimony Generate Knowledge?" *Philosophica* 78 (2006): 105–27, J. Adam Carter and Philip J. Nickel, "On Testimony and Transmission," *Episteme* 11, 2 (2014): 145–55, <https://doi.org/10.1017/epi.2014.4>, Stephen Wright, *Knowledge Transmission* (Routledge, 2018), <https://doi.org/10.4324/9781315111384>.

<sup>15</sup> Lackey, "A Deflationary Account of Group Testimony." used a similar argumentation to rule out counterexamples with an identical structure to REPORT CASE. However, she did not deal with counterexamples with an identical structure to TALK CASE.

<sup>16</sup> "Groups, Trust, and Testimony."



properly asserts that  $q$ , then  $x$  understands  $q$ . However, the assistant does not understand nor is able to grasp  $q$ ; in the words of Kallestrup, “he lacks the required expertise to grasp such a complex proposition.”<sup>17</sup> Therefore, the assistant does not testify that  $q$ . Neither Dr. X nor Dr. Y can testify that  $q$ , given that they are not even aware of this conclusion  $q$ . Thus, the testifier is the group itself. Is this a good argument? There are several problems with this argument.

### 3.2.1 Testimony Can Generate Understanding

First of all, underlying this argument is the following premise:

- (U) If a sender  $S$  doesn’t understand  $\phi$ , then a recipient  $R$  cannot acquire understanding of  $\phi$  on the basis of the spoken or written word about  $\phi$  provided by  $S$ .

Understanding, along with knowledge, is an important type of cognitive achievement. Ideally we not only want to know things, but also to understand them. There are several types of understanding, but here we will focus mainly on the more common – the so-called *objectual understanding* – which takes the form of “ $S$  understands  $\phi$ ” where  $\phi$  is a certain domain, subject matter, or a body of information.<sup>18</sup> For example, “ $S$  understands the theory of evolution.” It is typically accepted that a necessary condition for a subject  $S$  to understand something  $\phi$  is to be able to offer an explanation of  $\phi$ .<sup>19</sup> In this regard, Jonathan L. Kvanvig<sup>20</sup> holds that “understanding requires the grasping of explanatory and other coherence-making relationships in a large and comprehensive body of information.” In the same line of reasoning, Wayne D. Riggs<sup>21</sup> argues that understanding a domain “requires a deep appreciation, grasp, or awareness of how its parts fit together,

---

<sup>17</sup> *Ibid.*

<sup>18</sup> In addition to *objectual understanding*, one can also distinguish *interrogative understanding*, which take the form “ $S$  understand *why*  $\phi$ ”, and *propositional understanding*, which take the form “ $S$  understand *that*  $p$ .” It can be argued that there is nothing distinctive about this latter kind of understanding, because propositional understanding can be reduced to propositional knowledge. See Emma C. Gordon, “Is There Propositional Understanding?” *Logos & Episteme* 3, 2 (2012): 181–92, <https://doi.org/10.5840/logos-episteme20123234>.

<sup>19</sup> Since understanding somehow implies reflexively accessible bases in support of the object of understanding, Pritchard (*Epistemology* (Palgrave Macmillan UK, 2016), 128, <https://doi.org/10.1007/978-1-137-52692-2>) considers that understanding, unlike knowledge, “is of its nature an epistemically internalist notion.”

<sup>20</sup> *The Value of Knowledge and the Pursuit of Understanding* (Cambridge University Press, 2003), 192, <https://doi.org/10.1017/cbo9780511498909>.

<sup>21</sup> “Understanding ‘Virtue’ and the Virtue of Understanding,” in *Intellectual Virtue* (Oxford University Press, 2003), 217, <https://doi.org/10.1093/acprof:oso/9780199252732.003.0010>.

what role each one plays in the context of the whole, and of the role it plays in the larger scheme of things.” Understanding also has a social dimension: in epistemic communities there are some members – such as epistemic authorities, experts, teachers – who help other members to better understand something through testimony. Thus, it seems that testimony plays a relevant role in spreading understanding within epistemic communities.

Given this, one might find it intuitive to accept premise (U). For, if the sender does not understand a particular topic or domain, how can the recipient understand that topic from the sender’s word? In other words, it does not seem possible to improve understanding of a specific domain in a recipient if the sender has no understanding of that domain. It is based on (U) that it can be said that, in relation to TALK CASE, if the assistant doesn’t understand the domain of things to which  $q$  belongs, then a recipient, an audience, cannot acquire understanding of that domain or body of information of which  $q$  is part through the assistant’s spoken or written word. However, given that the audience has acquired knowledge and understanding of the information set containing  $q$ , the assistant cannot be regarded as testifying  $q$ , but instead “the testifier is the group itself” as Kallestrup<sup>22</sup> supports. Is this plausible? We want to argue that the intuition that underlies premise (U) is mistaken. In order to show this, to rule out premise (U), we have developed the following counterexample:

**SCHOOL ASSISTANT CASE:** Suppose the creationist teacher has already taught her students the theory of evolution. But because of an illness, she cannot teach the lesson in which she would explain a body of information that contains the topic that *a new fossil proves that ancient humans from which we evolved once lived in a certain area* – let’s call this information  $\psi$  for short. Since this teacher did not come to the class, because of her illness, a school assistant intentionally decided to give this lesson about  $\psi$  to these students. However, such a school assistant does not know nor understand anything about science, evolutionary theory or fossils. Nevertheless, she fetched the pedagogical notes about  $\psi$  from the teacher’s desk and began to read them rigorously so that these students could learn about  $\psi$ . Due to prior knowledge of the theory of evolution and fossils, such students were able to understand  $\psi$ .

In this case, the sender, the school assistant, does not understand  $\psi$ , but the recipients, the students, can acquire understanding of  $\psi$  from the written and spoken word provided by the assistant. Due to students’ background knowledge, it is reasonable to accept that they are able to explain  $\psi$  and make connections between  $\psi$  and the theory of evolution through the school assistant’s testimony. If

---

<sup>22</sup> “Groups, Trust, and Testimony.”

so, it is shown that testimony can be a generative source of understanding. Just as this situation can occur in the individual testimony, can also occur in the group testimony. Thus, as it is possible for students to gain understanding of a phenomenon  $\psi$  from the spoken and written word provided by the school assistant who does not understand  $\psi$ , it is also possible, with regard to TALK CASE, for an audience of scientists to gain understanding of a domain of things to which  $q$  belongs from the spoken and written word provided by the research assistant who does not understand that domain of things. Given that, TALK CASE is not decisive in rejecting reductionism, because the assistant doesn't need to understand a domain (which contains  $q$ ) in order to testify and generate understanding about that domain in his audience.<sup>23</sup>

### 3.2.2 Proper Assertion and Understanding

Advancing another type of objection, it may be pointed out that Kallestrup<sup>24</sup> seems to accept in his argument that if the assistant does not understand  $q$ , then he cannot properly assert  $q$ . And if the act of testifying involves proper assertion, the assistant cannot testify that  $q$ .<sup>25</sup> However, one can reply by stating that, although the assistant does not understand  $q$ , he understands another proposition; namely, that the content  $q$ , whatever it may be, is the result of evidence provided by Dr. X and Dr. Y with the application of *modus ponens* (we use  $r$  to abbreviate this proposition). Thus the assistant can properly assert  $r$  and, based on this, an audience of scientists is able to understand and know both  $r$  and  $q$  through this assistant's testimony. In other words, the assistant believes  $r$  and this belief enables him to properly assert  $q$ , on the basis of which the audience may then understand  $q$ .<sup>26</sup> Yet this argument assumes that there can be no proper assertion without understanding. But is this true?

To make this clear, let's first look at a brief characterization of *assertion*. The speech act of assertion denotes the familiar phenomenon by which a subject states, reports, contends, or claims that something is the case. But what distinguishes assertion from other speech acts (such as speculations or guesses)? It is typically

---

<sup>23</sup> For a different argument against premise (U), see Federica Isabella Malfatti, "Can Testimony Generate Understanding?" *Social Epistemology* 33, 6 (2019): 477–90, <https://doi.org/10.1080/02691728.2019.1628319>.

<sup>24</sup> "Groups, Trust, and Testimony."

<sup>25</sup> This requirement that a *proper assertion* is necessary for *testimony* seems very strong. See Sanford C. Goldberg, "Assertion, Testimony, and the Epistemic Significance of Speech," *Logos & Episteme* 1, 1 (2010): 59–65, <https://doi.org/10.5840/logos-episteme20101121>.

<sup>26</sup> We are grateful to Amanda Bryant for this idea.

accepted, according to Sanford C. Goldberg,<sup>27</sup> that “assertion is the unique speech act that is governed by a particular rule: the so called norm of assertion.” Thus, the speech act of assertion can be individuated by reference to this rule or norm. Such norm has the following structure:

One should assert that  $p$  only if  $\phi$ .

where we replace “ $\phi$ ” with the condition that captures the content of this norm. There has been a lot of disagreement over what is the most appropriate way to replace “ $\phi$ ”. The main candidates for  $\phi$  are the following: one knows that  $p$ ,<sup>28</sup> it is true that  $p$ ,<sup>29</sup> one is epistemically certain that  $p$ ,<sup>30</sup> it is reasonable for one to believe that  $p$ .<sup>31</sup> But the argument put forward by Kallestrup<sup>32</sup> against reductionism assumes a different norm of assertion:

**Understanding norm of assertion (UNA):** One should assert that  $p$  only if one understands  $p$ .

It is based on this norm that Kallestrup claims that the assistant in TALK CASE is not properly asserting that  $q$  and, thus, is not testifying that  $q$ , since “nobody can properly assert a proposition they do not understand.”<sup>33</sup> But is this UNA rule plausible? We want to argue that UNA is false. On the one hand, if UNA is read in the sense of *objectual understanding*, as we are using in the previous section (which is the most typical sense of understanding),<sup>34</sup> then a speaker  $S$  should assert that  $p$  only if  $S$  understands a domain or body of information of which  $p$  is part. But this is a very strong requirement for assertion. A speaker need not understand a domain of things to which  $p$  belongs in order to make a proper

---

<sup>27</sup> *Assertion: On the Philosophical Significance of Assertoric Speech* (Oxford University Press, 2015), 3, <https://doi.org/10.1093/acprof:oso/9780198732488.001.0001>.

<sup>28</sup> Timothy Williamson, *Knowledge and Its Limits* (Oxford University Press, 2000), <https://doi.org/10.1093/019925656x.001.0001>.

<sup>29</sup> Matthew Weiner, “Must We Know What We Say?” *Philosophical Review* 114, 2 (2005): 227–51, <https://doi.org/10.1215/00318108-114-2-227>.

<sup>30</sup> Jason Stanley, “Knowledge and Certainty,” *Philosophical Issues* 18, 1 (2008): 35–57, <https://doi.org/10.1111/j.1533-6077.2008.00136.x>.

<sup>31</sup> Lackey, *Learning from Words*.

<sup>32</sup> “Groups, Trust, and Testimony.”

<sup>33</sup> *Ibid.*, 140.

<sup>34</sup> Here we will not address the reading of UNA with *propositional understanding*, because it is commonly argued – for example, by Gordon, “Is There Propositional Understanding?” – that propositional understanding is reduced to propositional knowledge. So with this reading UNA collapses into the knowledge norm of assertion (KNA). Cases such as TEACHER CASE can be presented as counterexamples to KNA. See Lackey, *Learning from Words*.

assertion that *p*. For instance, if our car breaks down, we can properly assert to our auto mechanic: “the car is not working properly.” And we can make this assertion in absence of understanding about the domain related to the functioning of cars and their mechanical components. It is not necessary to have any understanding about automobiles and their mechanical operation to make this assertion without being subject to criticism. If UNA were true, only experts in a given domain could make appropriate assertions about some proposition of that domain.<sup>35</sup> However, such requirement would absurdly preclude laypeople from making assertions. Our SCHOOL ASSISTANT CASE can also be a counterexample for UNA. For, in this case we have a school assistant who makes an assertion about fossils without any understanding about this domain. Moreover, her assertion does not seem improper, given that she is aware that the teacher’s notes she is using are appropriate, reliably conveying information for students.

On the other hand, if UNA is read in the sense of *interrogative understanding*, then a speaker *S* should assert that *p* only if *S* understands *why p*. And for *S* to understand *why p*, *S* must give an explanation or reason *q* why *p* (in other words, interrogative understanding is equivalent to understanding that *p* because *q*). According to Alison Hills,<sup>36</sup> “understanding why *p*, though, requires more than the correct belief that *p* because *q*. It requires a grasp of the reason why *p*, or more precisely, a grasp of the relationship between *p* and *q*.” This means that, for example, *S* is able to provide the correct explanation or reason *q* for the information that *p*, to draw the conclusion that *p* from the explanation that *q*, explaining the relation between *p* and *q* in his own words, among other aspects.<sup>37</sup> But requiring such an *interrogative understanding* to make proper assertions is a very strong demand. For example, we can adequately assert to our auto mechanic that the car we are using is not accelerating properly (compared to its usual operation), even when we are unable to find out a non-circular explanation or reason for it. And if our auto mechanic tells us that the car is not accelerating properly because the car has bad spark plugs, we can thus gain knowledge of such an explanation, yet we may be in a situation where we do not understand such an explanation. This is because, unlike the auto mechanic, we don’t have any background beliefs about spark plugs nor are we able to grasp how the spark plugs are associated with the operation of car acceleration. However, there seems to be

---

<sup>35</sup> For the idea that what distinguishes experts from laypeople is at least their understanding of a domain, see Michel Croce, “On What It Takes to Be an Expert,” *The Philosophical Quarterly* 69, 274 (2018): 1–21, <https://doi.org/10.1093/pq/pqy044>.

<sup>36</sup> “Understanding Why,” *Nous* 50, 4 (2015): 663, <https://doi.org/10.1111/nous.12092>.

<sup>37</sup> For a complete characterization see Hills, “Understanding Why.”

nothing wrong with making that initial assertion about car acceleration problems. Once again, to require understanding to make proper assertions would be to improperly intellectualize the speech act of making assertions, since only experts would be entitled to make assertions. Even those who are in favor of accepting the condition of interrogative understanding in some cases consider that “the proposal that understanding is the norm of assertion is false,” such as J. Adam Carter and Emma C. Gordon<sup>38</sup> in claiming that:<sup>39</sup>

There are indeed many proper assertions for which any kind of understanding is not a necessary condition – for example, ‘the bird is yellow’ (an assertion of perceptual knowledge) does not require being able to fill out any further claim including the word ‘because’ before that particular assertion counts as permissible.

What is the main epistemic aim of assertion? As we argued above, this main purpose does not seem to be related to the speaker’s understanding; instead it seems more plausible to accept that the relevant aim of assertion is generating (or at least it has the disposition to generate) some epistemic status in the hearer or recipient. This is for two main reasons: First, because the social function of language is to convey or communicate information, often through assertion speech acts. Second, because we are cognitively limited beings (that is, we cannot afford to know many things firsthand or in isolation), we need to rely on other people’s words, especially on proper assertions, to gain knowledge. Based on similar reasons, Charlie Pelling<sup>40</sup> argues for the following rule of assertion:<sup>41</sup>

**Audience-oriented norm of assertion (ANA):** One should assert that *p* only if it is fit to give a hearer knowledge that *p*.<sup>42</sup>

---

<sup>38</sup> “Norms of Assertion: The Quantity and Quality of Epistemic Support,” *Philosophia* 39, 4 (2011): 631, <https://doi.org/10.1007/s11406-011-9317-6>.

<sup>39</sup> Mona Simion, “The Explanation Proffering Norm of Moral Assertion,” *Ethical Theory and Moral Practice* 21, 3 (2018): 486, <https://doi.org/10.1007/s10677-018-9922-6> also rules out UNA.

<sup>40</sup> “Assertion and the Provision of Knowledge,” *The Philosophical Quarterly* 63, 251 (2013): 294, <https://doi.org/10.1111/1467-9213.12013>.

<sup>41</sup> Manuel García-Carpintero, “Assertion and the Semantics of Force-Markers,” in *The Semantics/Pragmatics Distinction*, ed. Claudia Bianchi (CSLI Publications, 2004), 156 developed an assertion rule very similar to this one.

<sup>42</sup> It is necessary to clarify how this rule allows to overcome those counterexamples of proper assertions without hearers, such as a private assertion (for example, written in the secret diary). According to Pelling (“Assertion and the Provision of Knowledge,” 300.), “we should think of assertions which are fit to give knowledge as those that, even if they do not in fact give knowledge, at least have the right kind of evidential bases – the kind which they would need to have in order to give knowledge.”

In a similar way, Christoph Kelp<sup>43</sup> holds that assertion has the epistemic function of generating knowledge in hearers, defending the following rule of assertion:

**Functionalist norm of assertion (FNA):** One should assert that *p* only if it has the disposition to generate knowledge that *p* in hearers.

If these ANA and FNA assertion rules are plausible, we can say that in TALK CASE the assistant made a proper assertion. This is because what the assistant utters about *q* to his audience in that context has the disposition to generate knowledge and understanding in his audience about *q*, even if the assistant himself has no knowledge or understanding of that domain. After all, what the assistant utters comes from reliable processes (applying *modus ponens* from information received from Dr. X and Dr. Y) and this utterance about *q* generates knowledge and understanding in his audience of scientists. He does not violate any plausible and relevant assertion rule that we are considering.<sup>44</sup> But, if this is so, then there is no reason to hold that the assistant is not really testifying that *q*. Thus, TALK CASE does not show that reductionism in relation to group testimony is false.

### 3.2.3 Assertion and Grasping

Perhaps Kallestrup<sup>45</sup> can reply that the biggest problem is not with the violation of an assertion norm, but with the act of asserting itself. In other words, the assistant's speech act cannot even be considered an assertion because he does not *grasp* the proposition under consideration; in Kallestrup's own words, the assistant "even lacks the required expertise to grasp such a complex proposition."<sup>46</sup> So it seems that Kallestrup<sup>47</sup> is committed to the idea that *grasping* is a necessary condition for assertion and, since the assistant is not able to *grasp* the proposition *q*, he cannot believe and assert such a proposition or testify it.

However, Kallestrup reasons are not plausible; for, as we will argue below, on the one hand, *grasping*, understood in a phenomenal sense, is not a necessary condition for believing and asserting; and, on the other hand, there are other

---

<sup>43</sup> "Assertion: A Function First Account," *Noûs* 52, 2 (2016): 16, <https://doi.org/10.1111/nous.12153>.

<sup>44</sup> It could be argued that what the assistant utters does not satisfy the knowledge norm of assertion (KNA). However, with TEACHER CASE it can be indorsed that KNA is false. See Lackey, *Learning from Words*, 111–14 and Pelling, "Assertion and the Provision of Knowledge," 305–7.

<sup>45</sup> "Groups, Trust, and Testimony."

<sup>46</sup> *Ibid.*, 140.

<sup>47</sup> "Groups, Trust, and Testimony."

theories of *grasping* in which we can hold that the assistant *grasps* such a proposition *q*. So it is worth questioning: what *grasping* a proposition is? Given that Kallestrup does not give us any account of “grasping,” it is important to survey what are the main theories of grasping.

Before this analyses, in order to show that Kallestrup is wrong, we will start by presenting simple and intuitive examples in which a subject can genuinely assert that *p*, for example by believing and reporting that *p*, without *grasping* (in a phenomenal sense) that *p*. If these examples are plausible, we show that there can be assertion without grasping (in such a phenomenal sense). Let’s look at two cases:

**COLOR-BLIND CASE:** Suppose that Mary is a complete color-blind or achromat; so, she is unable to grasp the proposition that <ripe tomatoes are red>. However, she learned this proposition at school, by trusting her teacher testimony, and believes that it is so. For this reason, she is able to assert that <ripe tomatoes are red>, when reporting this to her son, without really grasping this proposition.

**PRE-TEEN CASE:** Suppose that Joseph, a pre-teen, has not yet acquired the required expertise to grasp a complex scientific proposition, such as <the Sun is about 1,300,000 times the volume of the Earth>. But, he learned this proposition from his father, an astrophysicist, and by trusting his father he believes that proposition is true (although he doesn’t grasp it). When he is talking to his friends, he is able to assert that <the Sun is about 1,300,000 times the volume of the Earth>, by reporting it, without grasping this proposition.

These examples illustrate that there is a state of mind – *grasping* (related with phenomenal experiences) – that goes beyond belief, knowledge and assertion, in such a way that one can assert that *p* (as well as one can believe and know that *p*) without grasping that *p*. Thus, if such cases illustrate that there can be assertion without grasping, the same can happen with the assistant in TALK CASE. In fact, the assistant knows that proposition *q* is not meaningless; moreover, he knows that *q* belongs to the scientific domain, and he also knows that *q* was produced by a reliable process through the application of an inference of *modus ponens* from the information received by the reliable testimonies of Dr. X and Dr. Y. If it is so, the assistant can assert that *q*, when reporting such proposition to his audience, even if he is unable to grasp such a complex proposition (similarly to what happens in COLOR-BLIND CASE and in PRE-TEEN CASE).

In such cases, it seems that the subjects under consideration genuinely make an assertion. Following Goldberg,<sup>48</sup> we can say that they are uttering a declarative sentence, in a sincere way (and not pretending or guessing), aiming communicate knowledge (which they received by trusting on reliable testimonies). In addition,

---

<sup>48</sup> *Assertion*, 6–9.



the assertions of such subjects can be challenged. For example, a recipient can ask on what basis they make these claims – and they can respond that they make these claims on the basis of reliable testimonies (in conjunction with an inference rule, at least in TALK CASE).<sup>49</sup> This can be considered as evidence that these subjects can have for their claims.

But although they assert a proposition, there is a sense in which we can say that they do not grasp that proposition. Why not? According to David Bourget,<sup>50</sup> the best theory of grasping is the *phenomenal theory*, in which “grasping a proposition is a matter of having a phenomenal experience that has the proposition as its content,” namely:

**(TFT) The Phenomenal Theory:** To grasp *p* is to have a phenomenal experience with *p* as content.

In such theory, experiences have intentional contents in the weak sense of presenting things. For example, when I look at one of my books, I seem to undergo an experience that *presents* me with a rectangular shape with many sheets of paper, etc. (TFT)’s central point can be summed up in the idea that *grasping is a matter of experience*, in such a way that if we cannot experience the content of a proposition, then we don’t grasp it. That’s why Mary, in COLOR-BLIND CASE, doesn’t grasp the proposition that <ripe tomatoes are red>; precisely because she lacks the ability to experience the color red (in perception or imagination). But suppose it is possible to perform a surgical operation that allows Mary to gain the ability to see colors for the first time. In that case, Mary would be able to grasp the proposition under consideration.

Something similar can be said about PRE-TEEN CASE. In this case, Joseph doesn’t grasp the proposition that <the Sun is about 1,300,000 times the volume of the Earth> because he is unable to experience this content or something similar; for example, because he has no visual model available to help him in such task. The same is true with TALK CASE; the assistant doesn’t grasp the proposition that *q*, given that he lacks the required expertise to build a visual model (or do not have a model available) that would allow him to experience such content. Despite this, even though they do not have this type of grasping, as we argued above, they can assert the proposition in question. However, suppose that Joseph’s father, in PRE-TEEN CASE, builds a model to assist his son in grasping the new proposition

---

<sup>49</sup> But suppose the recipient is not satisfied with that answer. According to Goldberg (*ibid.*, 75), in this situation these subjects are epistemically entitled to pass the epistemic burden to those people from whom they received those beliefs.

<sup>50</sup> “The Role of Consciousness in Grasping and Understanding,” *Philosophy and Phenomenological Research* 95, 2 (2015): 19, <https://doi.org/10.1111/phpr.12208>.

learned. Such a model draws, for example, an analogy that allows him to visualize that the relationship between the volume of the sun and the earth is like the relationship between the volume of a basketball and the volume of an apple seed.<sup>51</sup> This model helps Joseph to grasp this content by providing him with a visual experience. A similar model could help the assistant, in TALK CASE, to grasp the complex proposition *q*. But the assertion can occur regardless of this type of grasping.

There are other theories of grasping in which it is not even necessary to offer a visual model or some kind of experience for the subject to grasp the proposition in question. The most typical and influential theory of grasping is the *inferential theory*. On this theory, following Bourget, “grasping a proposition is a matter of having a thought that represents the proposition and is suitably connected to other mental states through inference-like dispositions.”<sup>52</sup> So, grasping a proposition *p* has to do with being able to reason properly about the implications between *p* and other propositions. Such a theory is supported by Kvanvig,<sup>53</sup> Martine Nida-Rümelin,<sup>54</sup> Stephen R Grimm,<sup>55</sup> Daniel A. Wilkenfeld<sup>56</sup> and can be presented like this:

**(TIT) The Inferential Theory:** A thought *t* with content *p* is a grasping of *p* to the extent that *t* is appropriately inferentially connected to other mental states of the subject.<sup>57</sup>

But this theory allows us to conclude that, in the cases mentioned above, as well as in the TALK CASE, the subjects really grasp the propositions under consideration, precisely because they are able to make inferences based on such propositions. Starting with COLOR-BLIND CASE, even if Mary is unable to have *phenomenal experiences of red* (call it *R*), she can learn (from reliable testimonies) and know that <red things cause *R* experiences>; and based on that she can infer that <ripe tomatoes cause *R* experiences>, <at typical vertical traffic lights, the lamp at the top, when switched on, causes *R* experiences>, <when a fire truck

---

<sup>51</sup> This example is inspired by Bourget (*ibid.*, 3–4).

<sup>52</sup> *Ibid.*, 11.

<sup>53</sup> *The Value of Knowledge and the Pursuit of Understanding*.

<sup>54</sup> “Grasping Phenomenal Properties,” in *Phenomenal Concepts and Phenomenal Knowledge* (Oxford University Press, 2007), 307–38, <https://doi.org/10.1093/acprof:oso/9780195171655.003.0013>.

<sup>55</sup> “Understanding,” in *The Routledge Companion to Epistemology* (Routledge, 2011), 110–20.

<sup>56</sup> “Understanding as Representation Manipulability,” *Synthese* 190, 6 (2013): 997–1016, <https://doi.org/10.1007/s11229-011-0055-x>.

<sup>57</sup> See Bourget, “The Role of Consciousness in Grasping and Understanding,” 14.

appears, it causes *R* experiences>, <things marked with the RED symbol (in the ColorAdd system) cause *R* experiences>, and so on.

Something similar can be said about PRE-TEEN CASE. Joseph can establish numerous inferences from the proposition <the Sun is about 1,300,000 times the volume of the Earth>, such as <the sun is larger than our school>, <the sun cannot be a soccer ball>, and so on. This same strategy is available to the assistant in TALK CASE. In such a case from the complex proposition *q*, and given his background knowledge, the assistant can infer that <*q* belongs to the scientific domain>, <*q* is not about philosophy or literature>, <*q* must be presented to an audience of scientists and not to an audience of children>, and so on. So, if the assistant is able to make inferences based on the proposition under consideration, then according to (TIT) theory he really grasp the proposition *q*.

It is worth considering a last theory of grasping that is based on the work of Timothy Williamson.<sup>58,59</sup> On Williamson's account, to grasp a word or proposition is to be a member of a community that uses that word or proposition. In addition, one counts as a member of a community insofar as one participates in relevant causal interactions with other members of that community. In this regard, Williamson<sup>60</sup> holds that such members "use a word as a word of a public language, allowing its reference in their mouths to be fixed by its use over the whole community." In turn, a subject does not grasp a word or proposition when, following Williamson, there is a "lack of causal interaction with the social practice of using that word" or proposition.<sup>61</sup> Simply put, this theory holds that:

**(TET) The Externalist Theory:** To grasp *p* is to be a member of a community that uses *p*.

Based on this theory we can claim that the subjects in the cases above grasp the propositions under consideration, given that they have a "sufficiently fluent engagement in the practice" in which such propositions are used. For example, Mary is a member of a community through which she has causal interactions (for example, through testimony) to use the proposition that <ripe tomatoes are red>. This is also true of Joseph regarding the proposition that <the Sun is about 1,300,000 times the volume of the Earth>. And the same solution can be applied to the assistant in TALK CASE. In such a case it can be argued that the assistant has

---

<sup>58</sup> "Conceptual Truth'," *Aristotelian Society Supplementary Volume* 80, 1 (2006): 1–41, <https://doi.org/10.1111/j.1467-8349.2006.00136.x>; *The Philosophy of Philosophy* (Blackwell Publishing Ltd, 2007), <https://doi.org/10.1002/9780470696675>.

<sup>59</sup> We are grateful to Bruno Jacinto for this suggestion.

<sup>60</sup> "Conceptual Truth'," 36.

<sup>61</sup> *Ibid.*, 38.

causal interaction with the social practice of using the proposition  $q$  (after all, he acquired such proposition  $q$  for being part of a research community and for giving a talk to an audience of scientists who are going to use this proposition). Thus, contrary to Kallestrup,<sup>62</sup> we can conclude that there is a sense in which the assistant grasps the proposition  $q$ . But even in an interpretation in which he does not grasp  $q$ , as seen in the phenomenal theory, the assistant can continue to assert  $q$ .

### 3.2.4 A Final Objection

As a last objection, it can be argued that the assistant in TALK CASE, because he does not understand complex propositions about physics such as  $p$  and complex mathematical propositions such as  $p \rightarrow q$ , is not able to apply a *modus ponens* based on those propositions.<sup>63</sup> For it does not seem that one can properly apply *modus ponens* from what is not understood. For example, suppose we received from two different people two identical sentences containing indexicals; if we do not know the context of illocution of such sentences, it does not seem that we can say that they express the same proposition, nor can we properly use such sentences to make inferences. Thus, if the assistant does not understand the content of complex propositions, how can he know that the proposition provided by the physicist is the same proposition that corresponds to the antecedent of a conditional provided by the mathematician? The point is that the assistant could properly apply *modus ponens* rule only if it were just a syntactic application. But it does not seem that applying the *modus ponens* rule is just a syntactic application. Instead, in order to properly apply *modus ponens* one must know the semantics, the meaning, of what is being considered.

A proponent of the non-reductionist view may be able to resist this latter objection by slightly modifying TALK CASE. Suppose, instead of the assistant applying *modus ponens*, he has a different and much simpler task. Dr. X and Dr. Y gave the assistant a three-part pre-written text: the first part only has the conclusion  $p$  and a blank space to put the proof provided by Dr. X; the second part only has the conclusion  $p \rightarrow q$  and a blank space to put the proof provided by Dr. Y; in the last part appears the application of *modus ponens* with the final conclusion  $q$ . Suppose further that Dr. X and Dr. Y have no other communication with each other and are able to reach desired individual conclusions without the other knowing this result. Thus, the assistant only needs to perform the following

---

<sup>62</sup> "Groups, Trust, and Testimony."

<sup>63</sup> We are grateful to Ricardo Santos for this idea.

task: if the assistant independently receives Dr. X proof and Dr. Y proof, he will mechanically fill in the blanks of this pre-written text with those proofs and read the entire text to his audience.<sup>64</sup>

However, this modification of TALK CASE is still worse than the case originally presented in section 2. For in this modified case the assistant has no cognitive achievement. At least in the original case the assistant had a relevant cognitive task, making an important contribution: trying to apply *modus ponens* (which seems to involve not only syntactic but also semantic tasks). Now his role is reduced to a mere automatic input and output system, working only at syntactic level. There is no salient difference between this assistant or a computer in performing the task in question. If this is so, then it is not clear that we are facing a group testimony case, because testimony involves intentions to convey information and it is doubtful that an automatic system, like a computer, has such intentions. Furthermore, if what is transmitted by the system results from a simple automatic merging of individually written and non-collaborative information from Dr. X and Dr. Y, then this does not seem to be a group testimony case, but rather a case of a single output containing several instances of individual testimony. But if the group is effectively collaborative and moreover if the assistant is not like a computer and really intends to convey information on group behalf to a particular audience then, as we argued in the previous sections, the testimony of such a group can be reducible to the assistant's testimony.

#### 4. Advantages of Reductionism

In the previous sections we argued that premises (K) and (U) are false. A more plausible and reasonable epistemic principle to the phenomenon of testimony seems to be the following:

- (R) If a sender *S* is not reliable in transmitting information that *p*, then a recipient *R* is not in position to know (or to understand) that *p* on the basis of the testimony that *p* provided by *S*.

This principle (R) allows testimony to function as a generative epistemic source. This is because, as we saw in TEACHER CASE, a sender knowing that *p* is not necessary for a recipient to acquire testimonial knowledge that *p*; rather, what is necessary, among other conditions, is reliability in the transmission of information by the sender. Without reliable transmission, there is no testimonial knowledge acquisition. A similar point can be made regarding understanding.

---

<sup>64</sup> This modification of TALK CASE is closer to the original case presented by Bird, "Social Knowing," 34–35.

Looking at REPORT CASE again, there is no problem that no single member of committee knows that  $q$ , because a sender's knowledge that  $q$  is not necessary for a recipient to acquire knowledge that  $q$  on the basis of sender's testimony. The important thing, according to (R), is the reliability in the transmission of information. In this regard, a singular member  $S$  of committee, being a competent scientist, can individually and reliably transmit the information that  $q$ . Thus, the source of testimonial knowledge is not the committee itself, but it is somehow reducible to the reliability of  $S$ . For, whether recipients acquire knowledge that  $q$  on the basis of  $S$ 's testimony depends on whether  $S$  is reliable in transmitting information that  $q$ . An analogous description can be made for TALK CASE.

This is a reductive view on group testimony, since the epistemic status of testimony of a group  $g$  on a given proposition  $p$  *reduces* to the reliability in the transmission of information that  $p$  by a singular member of  $g$ . Following this reductionist view, group testimony can be treated just like an instance of individual testimony, there being no special epistemology to deal with the phenomenon of group testimony. Thus, in order to explain and evaluate group testimony, we only need to use the available resources we have to evaluate individual testimony. From this perspective, the phenomenon of group testimony does not involve any mystery and can be explained in a parsimonious way, because it does not require new theoretical resources. However, following a non-reductionist view, there are several difficult explanatory tasks: in particular, it would be necessary to develop a successful framework to explain how groups can act and have intentions in a way that does not depend solely on the individual acts and intentions of its members. The reductionist view is simpler and is not subordinate to this explanatory framework.<sup>65</sup>

---

<sup>65</sup> Acknowledgements: I am grateful to Ricardo Santos, Michel Croce, Amanda Bryant, Bruno Jacinto, Bogdan Dicher, David Yates, Célia Teixeira, Vitor Guerreiro, Sofia Miguens, Charles Travis, and Jennifer Lackey for helpful comments and discussion on an earlier version of this paper. I also thank audiences for their questions on the presentations of this work at: *The Epistemology of Testimony: Authority and Disagreement* (held at the University of Porto) and *LanCog Workshop on Group Epistemology* (held at the University of Lisbon). Any errors or omissions are my responsibility. Work for this paper was supported by the post-doctoral project CEECIND/01066/2017 of the Portuguese Foundation for Science and Technology.